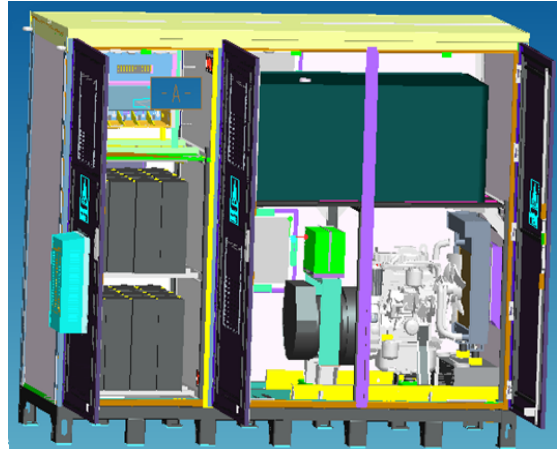


# LIANNET RENTAL POWER SYSTEM

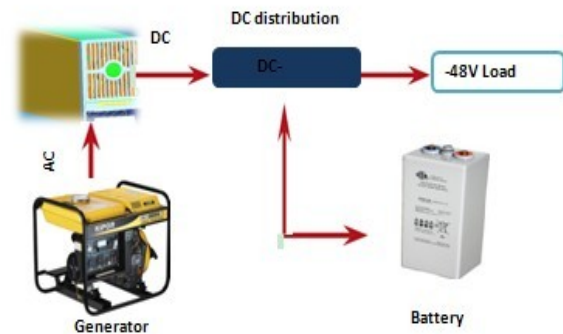
## Overview

The rental system with mini-shelter solution consist of Rectifier + Battery combine cabinet and DG cabinet, canopy with canopy and base. Used in no mains rural sites for telecom sites, the system can work under CDC mode. Cabinets are fabricated by sheet metal with core board and can be assembly on site. Side board adopt thick sandwich material with heat insulation in the middle. System wiring is down-in and down-out. Each cabinet has separated cooling type based on the different application.



## Feature

- Advanced smart supervision unit have CDC control with DG start / stop function based on battery capacity and voltage
- Has anticorrosive and waterproof IP55
- Hot –swappable, Full front access
- Wide operating temperature range and strong environment adaptability
- Extra-wide input voltage range (80~300Vac) and strong grid adaptability
- Adopting APFC technology, achieving high input power PF
- Smart interface available, realizing easy networking monitoring
- Surge protection, and provides multiple DC power distribution outputs



## Application

- Telecommunication
- Outdoor UMTS/GSM/CDMA base stations;
- Integrated outdoor base stations
- Outdoor distributed base stations
- Outdoor network access points

# LIANNET DC EV-CHARGE CABINET

## Overview

Liannet xxx Charging Cabinets, offer utilities, high-reliability, plug-in electric vehicle charging. The easy-to-use stations provide multiple power options, integrating aesthetics, ergonomics with sturdy construction, ideal for residential, commercial and outdoor public applications.

- IP30 protection, Suitable for industry application. Working temperature range is from -20°C to +65°C

## Feature

- High Reliability  
Integrated input surge protection ground fault detection, DC contactor, and emergency turn-off switch. Insulation monitor is optional
- Advanced Rectifier technologies  
High efficiency above 93%, and can reach 800A output
- Smart Controller  
With alarm, analysis, log, and record function
- Advanced Battery Management  
Support different battery used in e-car, and support multi CAN protocols of BMS in e-car, to ensure the safety and efficiency charge voltage and current
- Friendly User Interface  
With LCD display and keyboard, easy use and set the operation parameters
- Network Interface  
With Ethernet, modem and RS485 interface.  
With USB interface to do software upgrade and running datum download



## Dimension and Weight

Item	W × D × H (mm)	Weight (kg)
XXXXXX	800 × 600 × 2200	200

## Specification

### Electrical Input

Grid Frequency	45Hz~65Hz
Input Voltage	380Vac+/- 20%
Input power factor	99%
Input power connections	3phase+N+PE
Input current THD	<3%

### Electrical Output

Output charge power	15KW
Output Voltage	400 Vdc
Output Current	250A
Voltage Regulation	≤±0.5%
Current Regulation	≤±0.5%
Current sharing	≤±3%
Efficiency	>93%

### Operational ratings

Operation Temperature	-20 °Cto+65°C
Storage Temperature	-40-°Cto+75°C
Operation Humidity	0 to 95%
Operation Altitude	2000m

### Functional Interface

Monitoring Parameters	Input voltage, output voltage, output current, charging module parameters
Control Parameters	Output voltage, output current
Battery management	Communicate with BMS to do charge control
Alarm, Record, log	With large memory to store alarm, log and records
Remote control	Support Ethernet, RS485, Modem interface
Local control	Support USB interface to do upgrade and download
Indication Light	With operation, charge, and alarm indication light

### Safety and Operation Ratings

Safety Compliance	EN61851-1-2001; EN61851-21-2001; EN61851-22-2001
Insulation Measure	Measure and alarm the insulation fault and do the operation (optional)
EMC	EN55022 Class A
IP	IP30

# LIANNET DC EV-CHARGE PILE

## Overview

LIANNET xxx DC EV-Charging pile, offer utilities, high-reliability, plug-in electric vehicle charging. The easy-to-use stations provide multiple power options, integrating aesthetics, ergonomics with sturdy construction and IP53 protection , ideal for residential, commercial and outdoor public applications.

With Ethernet, modem and RS485 interface.

- IP53 Protection  
Suitable for outdoor application, If use RF card, can reach up to IP55 protection. Working temperature range is from -20°C to +65°C

## Feature

- High Reliability  
Integrated input surge protection ground fault detection, DC contactor, and emergency turnoff switch
- Support Different BMS Protocols  
Ensure charging battery perfectly
- Utility Grade Energy Meter  
Integrated power metering circuitry provides accurate energy measurement
- Smart Card Reader  
Integrated standards-based IC or RF card reader and optional printer, provides optional driver billing and custom access control, preventing electricity theft and enhancing safety
- Smart Controller  
With alarm, analysis, log, and record function
- Integrated Fault Detection  
Ground Fault Detection, Over-Current Detection, Plug-Out Detection, Charging Complete Detection
- Network Interface



## Dimension and Weight

Item	W × D × H (mm)	Weight (kg)
XXXXXX	450 × 400 × 1550	50

## Specification

### Electrical Input

Input Power	100KW
Input Voltage	400V DC
Input Current	250A
Input Power Connections	Positive, Negative, PE
Standby power	5W

### Electrical Output

Output Charging Power	100KW
Output Voltage	400V DC
Output Current	250A
Output Charging Connector	IEC6219-1

### Operation Rating

Operation Temperature	-20°C to +65°C
Storage Temperature	-40°C to +75°C
Operating Humidity	0 to 95%
Operating Altitude	4000m

### Functional Interface

Card Reader	ISO15693, 14443, IC Card (Standard), RF(option)
Printer	Optional
BMS	Support CAN interface BMS
Power management	According to GB/T50063-2008,DL/T5137-2008,support setting fee rates
Remote Monitoring	Ethernet, RS485, Dry contact, Modem
Emergency Turnoff	Support isolating EV from DC power supplier
Indication Light	With operation charge, and alarm indication light

### Safety

Safety Compliance	EN61851-1-2001; EN61851-21-2001; EN61851-22-2001;
Insulation Measure	Combine with Back DC System, measure and alarm the insulation fault and do the protection (optional)
EMC Compliance	FCC part 15 Class A
IP	IC card reader: IP53, RF reader : IP55

# LIANNET AC EV-CHARGE PILE

## Overview

LIANNET xxx AC EV-Charging pile, offer utilities, high-reliability, plug-in electric vehicle charging. The easy-to-use stations provide multiple power options, integrating aesthetics, ergonomics with sturdy construction and IP53 protection, ideal for residential, commercial and outdoor public applications.

## Feature

- High Reliability  
Integrated input surge protection ground fault detection, AC contactor, and emergency turnoff switch
- Support Different BMS Protocols  
Ensure charging battery perfectly
- Utility Grade Energy Meter  
Integrated power metering circuitry provides accurate energy measurement
- Smart Card Reader  
Integrated standards-based IC or RF card reader and optional printer, provides optional driver billing and custom access control, preventing electricity theft and enhancing safety
- Smart Controller  
With alarm, analysis, log, and record function
- Integrated Fault Detection  
Ground Fault Detection, Over-Current Detection, Plug-Out Detection, Charging Complete Detection
- Network Interface

With Ethernet, modem and RS485 interface.

- IP53 Protection  
Suitable for outdoor application, If use RF card, can reach up to IP55 protection. Working temperature range is from -20°C to +65°C



## Dimension and Weight

Item	W × D × H (mm)	Weight (kg)
XXXXXX	450 × 400 × 1550	50



## Specification

### Electrical Input

Input Power	6KW
Input Voltage	220V AC, Single phase
Input Current	32A
Input Power Connections	L+NP+E
Standby power	5W

### Electrical Output

Output Charging Power	6KW
Output Voltage	220V AC, Single phase
Output Current	32A
Output Charging Connector	IEC6219-1

### Operation Rating

Operation Temperature	-20°C to +65°C
Storage Temperature	-40°C to +75°C
Operating Humidity	0 to 95%
Operating Altitude	4000m

### Functional Interface

Card Reader	ISO15693, 14443, IC Card (Standard), RF(option)
Printer	Optional
Ground fault detection	5 mA CCID with auto retry (15 minute delay, 3 tries)
Power management	According to GB/T50063-2008,DL/T5137-2008,support setting fee rates
Remote Monitoring	Ethernet, RS485, Dry contact, Modem
Emergency Turnoff	Support isolating EV from DC power supplier
Indication Light	With operation charge, and alarm indication light

### Safety and Operation ratings

Safety Compliance	EN61851-1-2001; EN61851-21-2001; EN61851-22-2001;
Surge Protection	Class C level surge protection
EMC Compliance	FCC part 15 Class A
IP	IC card reader: IP53, RF reader : IP55



# LIANNET Fe-Li BATTERY MODULE

## Overview

Liannet XXX standard backup battery is based on Fe-Li of BYD .It has been designed to provide power back-up for telecom equipment. It has excellent safety, high energy density, long lifetime, very nice temperature performance. It is green power newly of excellent safety and high reliability, which to use for large basic station、 outdoor cupboard and wind-solar hybrid system.XXX battery has been developed and qualified to suit the demanding requirements of performance and operational reliability of our customers. Cell manufacturing is carried out on established industrial production lines.

Cell voltage detect  
Current detect at charging and discharging  
Hardware protection  
Discharge control  
Charge control  
Balance control  
Temperature detect  
Communication  
Operating state display of system (LED)  
PACK voltage detect  
Fault alarm

## Feature

- ETSI 19 inches 3U rack-mount design
- Installation on standard telecom equipment racks
- According with ETSI standard,3U rack-mount design
- Support parallel connection for using with monitor
- Lifetime more than 10 year at +25°C
- Build-in battery control for efficient operation
- Comprehensive communication (CAN bus)
- Compatible with standard telecom equipment
- ROHs compliance
- More cabinet for value generating equipment
- Less weight for pole mounted sites
- No active cooling system required
- Simplified power system (no BFU required)
- High operation reliability
- Long lifetime
- Optimal management
- Battery management system function



## Specification

### Nominal characteristic

Nominal voltage (V)	48V DC
Capacity (C/5) (Ah)	50Ah
Energy(C/5) (Wh)	2400Wh

### Mechanical characteristic

Width (mm)	438 (19")
Height (mm)	130 (3U)
Depth (mm)	490
Weight (kg)	40

### Electric characteristic

Voltage window (V)	40~65.5
Charge voltage (V)	56.5
Charge method	No limit current
Max. output power(W)	2400
Recharge time (h)	10A*6hr (standard)

### Loads at the various back up time

30min* (W)	4500
1h* (W)	2500
2h* (W)	1250
4h* (W)	675

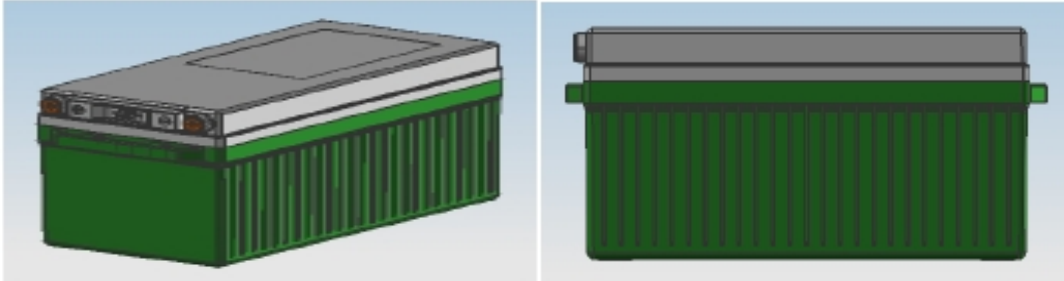
### Operation conditions

Lifetime +25°C	>10 years
Cycle life(100%DOD,+25°C, 80% Capacity left	>1000 (2400W discharge)
Operation temperature	-20°C ~ + 60°C
Transport regulation compliance	UN3090
Storage temperature and duration	12 months +25°C, 6moths +35°C, 3months +45°C
EMC standard compliance	EN61000 chapter 4.2.4.3.4.5.4.6/EN55022
Safety standard compliance	UL1642/UL2054/CE/GR1089/GR63
Protection class	IP20

# LIANNET Fe-Li BATTERY BANK

## Overview

Liannet XXX battery is based on BYD Fe-Li battery. It has excellent safety , high energy density, long service time, nice temperature performance, low cost and on pollution



## Functions

- Cell Voltage detect
- Cell temperature detect
- Could be connected to a BMS (Battery Management System) to monitor the battery

## Mechanical

- 4 C09 Cells in series as 1 branch and 3 branches in parallels 1battery module
- ABS+PC shell

## Specification

### Basic characteristics

Nominal Voltage	12V DC
Capacity	150Ah (Typical)
Electrical characteristics	
Charge method	CC
Charge current	30A(Standard )/100A (Maximum)
Charge cut-off voltage	3.8V/Cell
Discharge cut-off voltage	2.0V/Cell
Maximum discharge current	100A
Safety Certification	Cell: UL2580 Battery: CE UN38.3

### Mechanical characteristics

Length	442±3mm
Width	196±3mm
Height	210.5±2mm
Weight	25±0.5Kg
Operation conditions	
Storage Relative Humidity	10%~95%
Operating Temperature	charge: -5°C~+55°C/ Discharge: -20°C~+55°C
Storage Temperature	-25°C~+55°C
Maintenance	Balance the system every 6 months

